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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/708,963	11/08/2000	Kevin L. Gering	LIT-PI-420	3069

7590

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EXAMINER

VERSTEEG, STEVEN H

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 04/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/708,963	Applicant(s) GERING, KEVIN L.	
	Examiner Steven H VerSteeg	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 18-20 is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/8/00</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: “inventorfor” should be “inventor for” on page 10 at line 2.

Appropriate correction is required.

Claim Objections

2. Claims 9, 10, 12-15, and 17 are objected to because of the following informalities: “catalyst” should be “photocatalyst” in claim 9 at line 3; “comprising” should be “consisting of” to be in proper Markush terminology in claim 10 at line 2; “catalyst” should be “photocatalyst” in claim 12 at line 10; “that” needs inserted after “such” in claim 17 at line 2; and the semicolon in claim 17 at line 3 should be a period. Claim 10 depends from claim 9 and contains all of the limitations of claim 9. Therefore, claim 10 is objected to for the same reasons as claim 9. Claims 13-15 depend from claim 12 and contain all of the limitations of claim 12. Therefore, claims 13-15 are objected to for the same reasons as claim 12. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 1 recites the limitation "the catalyst particles" in line 9. There is insufficient antecedent basis for this limitation in the claim.

6. Claims 2-7 depend from claim 1 and contain all of the limitations of claim 1. Therefore, claims 2-7 are rejected for the same reasons as claim 1.

7. Claim 8 recites the limitation "the buoyant microspheres" in line 12. There is insufficient antecedent basis for this limitation in the claim.

8. Claims 9-15 depend from claim 8 and contain all of the limitations of claim 8. Therefore, claims 9-15 are rejected for the same reasons as claim 8.

Allowable Subject Matter

9. Claims 16 and 18-20 are allowed.

10. Claims 1 and 8 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

11. Claims 2-7 and 9-15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. Claims 9, 10, 12-15, and 17 would be allowable if written to overcome the claim objection presented above.

13. The following is a statement of reasons for the indication of allowable subject matter: it is neither anticipated nor obvious over the prior art of record to have a system for the continuous use and recapture of catalyst in liquid as claimed by Applicant in claim 1. It is also neither anticipated nor obvious over the prior art of record to have a photoreactor as claimed by Applicant in claim 8. It is also neither anticipated nor obvious over the prior art of record to

have a method of recapturing photocatalyst particles in liquid as claimed by Applicant in claim 16.

14. US 6,251,264 B1 to Tanaka et al. (Tanaka) discloses purifying water with titanium dioxide photocatalyst by adding the photocatalyst to the water in a chamber 1 and inducing reaction. Thereafter, the photocatalyst is later separated from the water to be processed by sedimentation in a separating reservoir 8. Thus, Tanaka discloses photocatalyst recovery to be by settling, not buoyancy. Also, there is no floatation chamber in which the titanium dioxide photocatalyst particles would float up to a photocatalyst recovery chamber.

15. US 5,779,912 to Gonzalez-Martin et al. (Gonzalez-Martin) and US 5,118,422 to Cooper et al. (Cooper) disclose using a photocatalyst such as titanium dioxide to purify water, but neither discloses or suggests a system or photoreactor or method in which the photocatalyst is fed downwardly and then floats upward.

16. Modifying any of the references of record to have the photocatalyst recovery to involve floating the particles upward would require improper hindsight.

General Information

For general status inquiries on applications not having received a first action on the merits, please contact the Technology Center 1700 receptionist at (571) 272-1700.

For inquiries involving Recovery of lost papers & cases, sending out missing papers, resetting shortened statutory periods, or for restarting the shortened statutory period for response, please contact Palestine Jenkins at (571) 272-1021.


For general inquiries such as fees, hours of operation, and employee location, please contact the Technology Center 1700 receptionist at (571) 272-1300.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H VerSteeg whose telephone number is (571) 272-1348. The examiner can normally be reached on Mon - Thurs (6:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven H VerSteeg
Primary Examiner
Art Unit 1753

shv
April 6, 2004